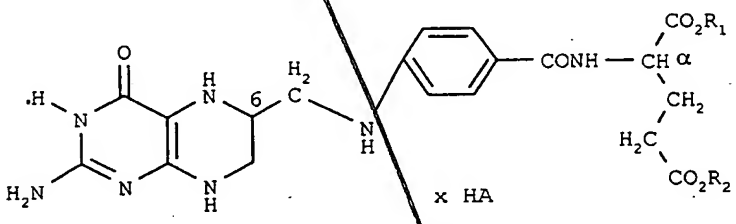
Claims

1 Process for preparing and concentrating (6S,αS) or (6S,αR) tetrahydrofolic acid ester salts and (6S,αS) or (6S,αR) tetrahydrofolic acid, characterised by preparing or dissolving equimolar or concentrated mixtures of diastereomers of addition salts of tetrahydrofolic acid esters with aromatic sulphonic acids in organic solvents, followed by crystallising them at least once, and then if applicable hydrolysing the crystallisate to produce (6S,αS) or (6S,αR) tetrahydrofolic acid, crystallising the latter as a free acid or isolating it in the form of a salt.

2 Process according to claim 1, characterised in that the addition salts of the tetrahydrofolic acid esters satisfy formula III, which includes the (6S,αS), (6S,αR), (6R,αS) and (6R,αR) diastereomers,



x HA (III),

in which R_1 or R_2 are H, and one of R_1 or R_2, or both R_1 and R_2 independently of one another represent a monovalent hydrocarbon radical or a heterohydrocarbon radical attached via a C atom, with heteroatoms selected from the group -O-, -S- and -N-,
HA stands for an aromatic sulphonic acid,
and x denotes an integer from 1 to 6 or a fractional number between 0 and 6.

3 Process according to claim 2, characterised in that R_1 and R_2 denote C_1-C_4 alkyl.

4 Process according to claim 3, characterised in that R_1 and R_2 stand for methyl.

5 Process according to claim 2, characterised in that x in formula III stands for the numbers 1 or 2, or a fractional number 0.5 and 2.

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6 Process according to claim 1, characterised in that the aromatic sulphonic acids satisfy formula IV,

R_3-SO_3H (IV),

in which R_3 represents unsubstituted phenyl or phenyl substituted with C_1-C_4 alkyl, C_1-C_4 haloalkyl or C_1-C_4 alkoxy.

7 Process according to claim 6, characterised in that the aromatic sulphonic acid is benzene sulphonic acid or p-toluene sulphonic acid.

8 Process according to claim 2, characterised in that in the formula III compounds R_1 and R_2 each represent methyl, x stands for 1 or 2 or for a fractional number between 0.5 and 2, and HA denotes phenyl-, toluyl-, fluoro-, chloro- or trifluoromethylphenyl sulphonic acid.

9 Process according to claim 8, characterised in that in the formula III compunds R_1 and R_2 each represent methyl, x stands for 1 or 2 or for a fractional number between 0.5 and 2, and HA denotes phenyl- or p-toluyl sulphonic acid.

10 Process according to claim 1, characterised in that the mixtures contain the (6S,αS) or (6S,αR) diastereomers respectively in a proportion of at least 5 percent by weight or more.

11 Process according to claim 1, characterised in that the organic solvents are polar organic solvents that dissolve at least 1 g of addition salt of a tetrahydrofolic acid ester per litre of solvent at boiling temperature.

12 Process according to claim 1, characterised in that alcohols or mixtues of alcohols with at least one further solvent are used.

13 Process according to clam 1, characterised by blending equimolar or concentrated mixtures of diastereomers of addition salts from tetrahydrofolic acid esters with aromatic sulphonic acids in a solvent and then heating the mixture to dissolve the addition salts of tetrahydrofolic acid esters and aromatic sulphonic acids, thereafter cooling down the solution, whereupon the (6S,αS) or (6S,αR) diastereomer crystallises out or both diastereomers crystallise out, and then separating the latter using filtration.

14 Process according to claim 1, characterised by the use of reaction solutions from the hydrogenation of folic acid esters, or from the hydrogenation of addition salts of folic acid esters and aromatic sulphonic acids, or from the hydrogenation of folic acid in the presence of sulphonic acids under esterifying conditions.

15 Process according to claim 1, characterised by using bases to hydrolyse (6S,αS) or (6S,αR) tetrahydrofolic acid ester sulphonates or mixtures thereof to give (6S,αS) or (6S,αR) tetrahydrofolic acid or mixtures thereof.